Carnegie Mellon
Software Engineering Institute

OCTAVE®-S Implementation Guide, Version 1.0

Volume 7: Critical Asset Worksheets for Applications

Christopher Alberts
Audrey Dorofee
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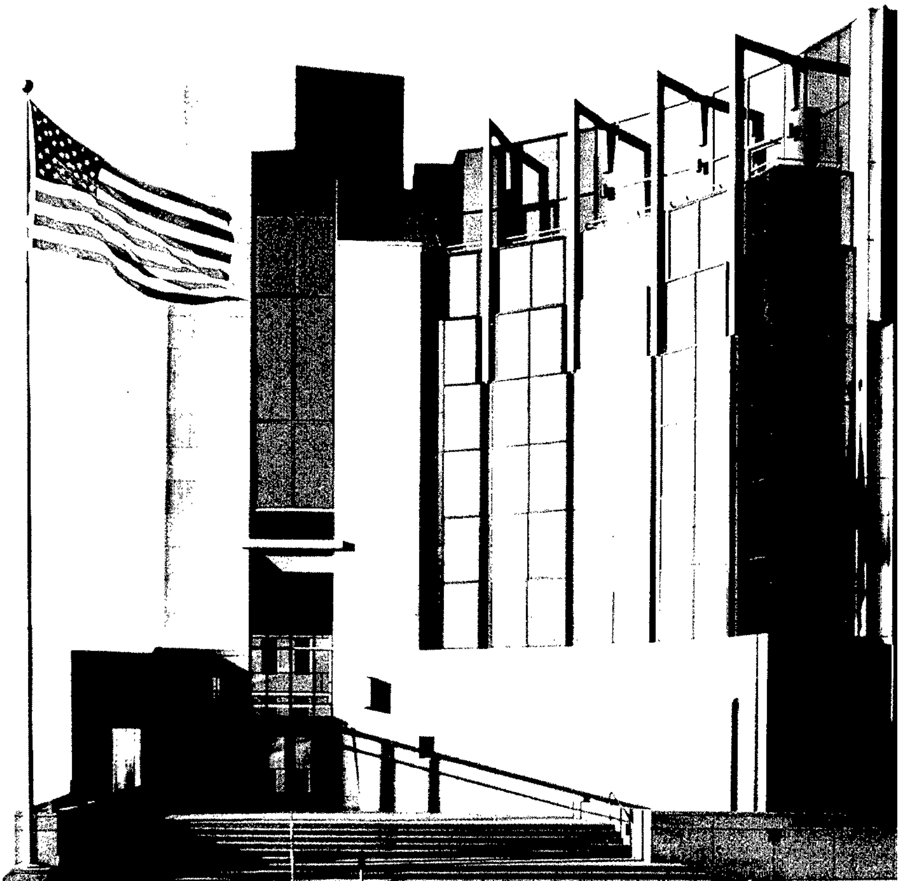
January 2005



HANDBOOK
CMU/SEI-2003-HB-003

Carnegie Mellon
Software Engineering Institute

Pittsburgh, PA 15213-3890

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Volume 7: Critical Asset Worksheets for Applications

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Networked Systems Survivability Program

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The ideas and findings in this report should not be construed as an official DoD position. It is published in the interest of scientific and technical information exchange.

FOR THE COMMANDER

Christos Scondras
Chief of Programs, XPK

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About This Document

This document is Volume 6 of the *OCTAVE-S Implementation Guide*, a 10-volume handbook supporting the OCTAVE-S methodology. This volume provides worksheets to document data related to critical assets that are categorized as applications.

The volumes in this handbook are

- *Volume 1: Introduction to OCTAVE-S* – This volume provides a basic description of OCTAVE-S and advice on how to use the guide.
- *Volume 2: Preparation Guidelines* – This volume contains background and guidance for preparing to conduct an OCTAVE-S evaluation.
- *Volume 3: Method Guidelines* – This volume includes detailed guidance for each OCTAVE-S activity.
- *Volume 4: Organizational Information Workbook* – This volume provides worksheets for all organizational-level information gathered and analyzed during OCTAVE-S.
- *Volume 5: Critical Asset Workbook for Information* – This volume provides worksheets to document data related to critical assets that are categorized as information.
- *Volume 6: Critical Asset Workbook for Systems* – This volume provides worksheets to document data related to critical assets that are categorized as systems.
- ***Volume 7: Critical Asset Workbook for Applications*** – This volume provides worksheets to document data related to critical assets that are categorized as applications.
- *Volume 8: Critical Asset Workbook for People* – This volume provides worksheets to document data related to critical assets that are categorized as people.
- *Volume 9: Strategy and Plan Workbook* – This volume provides worksheets to record the current and desired protection strategy and the risk mitigation plans.
- *Volume 10: Example Scenario* – This volume includes a detailed scenario illustrating a completed set of worksheets.

Abstract

The Operationally Critical Threat, Asset, and Vulnerability Evaluation^{SM} (OCTAVE$^{®}$) approach defines a risk-based strategic assessment and planning technique for security. OCTAVE is a self-directed approach, meaning that people from an organization assume responsibility for setting the organization's security strategy. OCTAVE-S is a variation of the approach tailored to the limited means and unique constraints typically found in small organizations (less than 100 people). OCTAVE-S is led by a small, interdisciplinary team (three to five people) of an organization's personnel who gather and analyze information, producing a protection strategy and mitigation plans based on the organization's unique operational security risks. To conduct OCTAVE-S effectively, the team must have broad knowledge of the organization's business and security processes, so it will be able to conduct all activities by itself.

1 Introduction

This document contains the Operationally Critical Threat, Asset, and Vulnerability Evaluation[SM] (OCTAVE[®])-S worksheets related to critical assets that are applications. The activities related to these worksheets are focused on analyzing a critical asset.

Table 1 provides a brief introduction to the contents of this workbook, using activity step numbers as a key. For more details about how to complete each step, refer to the *OCTAVE®-S Method Guidelines*, which can be found in Volume 3 of the *OCTAVE®-S Implementation Guide*.

Table 1: Worksheets Provided in This Workbook

Step	Description	Worksheet	Activity	Pages
Step 6	Start a *Critical Asset Information worksheet* for each critical asset. Record the name of the critical asset on its *Critical Asset Information worksheet.*	Critical Asset Information	Phase 1 Process S2 S2.1 Select Critical Assets	5-8
Step 7	Record your rationale for selecting each critical asset on that asset's *Critical Asset Information worksheet.*	Critical Asset Information	Phase 1 Process S2 S2.1 Select Critical Assets	5-8
Step 8	Record a description for each critical asset on that asset's *Critical Asset Selection worksheet.* Consider who uses each critical asset as well as who is responsible for it.	Critical Asset Information	Phase 1 Process S2 S2.1 Select Critical Assets	5-8
Step 9	Record assets that are related to each critical asset on that asset's *Critical Asset Information worksheet.* Refer to the *Asset Identification worksheet* to determine which assets are related to each critical asset.	Critical Asset Information	Phase 1 Process S2 S2.1 Select Critical Assets	5-8

[SM] Operationally Critical Threat, Asset, and Vulnerability Evaluation is a service mark of Carnegie Mellon University.

[®] OCTAVE is registered in the United States Patent and Trademark Office by Carnegie Mellon University.

Table 1: Worksheets Provided in This Workbook (cont.)

Step	Description	Worksheet	Activity	Pages
Step 10	Record the security requirements for each critical asset on that asset's *Critical Asset Information worksheet*.	Critical Asset Information	Phase 1 Process S2 S2.1 Select Critical Assets	5-8
Step 11	For each critical asset, record the most important security requirement on that asset's *Critical Asset Information worksheet*.	Critical Asset Information	Phase 1 Process S2 S2.1 Select Critical Assets	5-8
Step 12	Complete all appropriate threat trees for each critical asset. Mark each branch of each tree for which there is a non-negligible possibility of a threat to the asset. If you have difficulty interpreting a threat on any threat tree, review the description and examples of that threat in the *Threat Translation Guide*.	Risk Profile Threat Translation Guide	Phase 1 Process S2 S2.1 Identify Threats to Critical Assets	9-54
Step 13	Record specific examples of threat actors on the *Risk Profile worksheet* for each applicable actor-motive combination.	Risk Profile	Phase 1 Process S2 S2.1 Identify Threats to Critical Assets	9-54
Step 14	Record the strength of the motive for deliberate threats due to human actors. Also record how confident you are in your estimate of the strength of the actor's motive.	Risk Profile	Phase 1 Process S2 S2.1 Identify Threats to Critical Assets	9-54
Step 15	Record how often each threat has occurred in the past. Also record how accurate you believe your data are.	Risk Profile	Phase 1 Process S2 S2.1 Identify Threats to Critical Assets	9-54
Step 16	Record areas of concern for each source of threat where appropriate. An area of concern is a scenario defining how specific threats could affect the critical asset.	Risk Profile	Phase 1 Process S2 S2.1 Identify Threats to Critical Assets	9-54

Table 1: Worksheets Provided in This Workbook (cont.)

Step	Description	Worksheet	Activity	Pages
Step 17	Select the system of interest for each critical asset (i.e., the system most closely related to the critical asset).	Network Access Paths	Phase 2 Process S3 S3.1 Examine Access Paths	55-58
Step 18a	Review paths used to access each critical asset, and select key classes of components related to each critical asset. Determine which classes of components are part of the system of interest.	Network Access Paths	Phase 2 Process S3 S3.1 Examine Access Paths	55-58
Step 18b	Determine which classes of components serve as intermediate access points (i.e., which components are used to transmit information and applications from the system of interest to people).	Network Access Paths	Phase 2 Process S3 S3.1 Examine Access Paths	55-58
Step 18c	Determine which classes of components, both internal and external to the organization's networks, are used by people (e.g., users, attackers) to access the system.	Network Access Paths	Phase 2 Process S3 S3.1 Examine Access Paths	55-58
Step 18d	Determine where information from the system of interest is stored for backup purposes.	Network Access Paths	Phase 2 Process S3 S3.1 Examine Access Paths	55-58
Step 18e	Determine which other systems access information or applications from the system of interest and which other classes of components can be used to access critical information or services from the system of interest.	Network Access Paths	Phase 2 Process S3 S3.1 Examine Access Paths	55-58

Table 1: Worksheets Provided in This Workbook (cont.)

Step	Description	Worksheet	Activity	Pages
Step 22	Using the impact evaluation criteria as a guide, assign an impact value (high, medium, or low) for each active threat to each critical asset.	Risk Profile Impact Evaluation Criteria	Phase 3 Process S4 S4.1 Evaluate Impacts of Threats	9-54
Step 24	Using the probability evaluation criteria as a guide, assign a probability value (high, medium, or low) for each active threat to each critical asset. Document your confidence level in your probability estimate.	Risk Profile Probability Evaluation Criteria	Phase 3 Process S4 S4.3 Evaluate Probabilities of Threats	9-54
Step 26	Transfer the stoplight status for each security practice area from the *Security Practices worksheet* to the "Security Practice Areas" section (Step 26) of each critical asset's *Risk Profile worksheet.*	Risk Profile Security Practices	Phase 3 Process S5 S5.2 Select Mitigation Approaches	9-54
Step 27	Select a mitigation approach (mitigate, defer, accept) for each active risk. For each risk that you decided to mitigate, circle one or more security practice areas for which you intend to implement mitigation activities.	Risk Profile	Phase 3 Process S5 S5.2 Select Mitigation Approaches	9-54

2 Critical Asset Information Worksheet for Applications

Phase 1
Process S2
Activity S2.1

Step 6

Start a *Critical Asset Information worksheet* for each critical asset. Record the name of the critical asset on its *Critical Asset Information worksheet.*

Step 7

Record your rationale for selecting each critical asset on that asset's *Critical Asset Information worksheet.*

Step 8

Record a description for each critical asset on that asset's *Critical Asset Selection worksheet.* Consider who uses each critical asset as well as who is responsible for it.

Step 9

Record assets that are related to each critical asset on that asset's *Critical Asset Information worksheet.* Refer to the *Asset Identification worksheet* to determine which assets are related to each critical asset.

Phase 1
Process S2
Activity S2.2

Step 10

Record the security requirements for each critical asset on that asset's *Critical Asset Information worksheet.*

Step 11

For each critical asset, record the most important security requirement on that asset's *Critical Asset Information worksheet.*

Step 6	Step 7
Critical Asset	**Rationale for Selection**
What is the critical application?	*Why is this application critical to the organization?*

Step 9

Related Assets

Which assets are related to this application?

Systems:

Information:

Other:

Critical Asset Information Worksheet

Step 8

Description

Who uses the application?

Who is responsible for the application?

Step 10

Security Requirements

What are the security requirements for this application?

(Hint: Focus on what the security requirements should be for this application, not what they currently are.)

□ Confidentiality — Only authorized personnel can view ________________.

□ Integrity — Only authorized personnel can modify ________________ (e.g., install new versions, upgrade the service or application).

□ Availability — ________________ must be available for personnel to perform their jobs.

Unavailability cannot exceed ______ hour(s) per every ______ hours.

□ Other ____

____

Step 11

Most Important Security Requirement

Which security requirement is most important for this application?

□ Confidentiality

□ Integrity

□ Availability

□ Other

3 Risk Profile Worksheet for Applications – Human Actors Using Network Access

Phase 1
Process S2
Activity S2.3

Step 12

Complete the threat tree for *human actors using network access*. Mark each branch of each tree for which there is a non-negligible possibility of a threat to the asset.

If you have difficulty interpreting a threat on the threat tree, review the description and examples of that threat in the *Threat Translation Guide* (see pp. 60-63 of this workbook).

Step 13

Record specific examples of threat actors on the *Risk Profile worksheet* for each applicable actor-motive combination.

Step 14

Record the strength of the motive for deliberate threats due to human actors. Also record how confident you are in your estimate of the strength of the actor's motive.

Step 15

Record how often each threat has occurred in the past. Also record how accurate you believe your data are.

Step 16

Record areas of concern for each source of threat where appropriate. An area of concern is a scenario defining how specific threats could affect the critical asset.

continued

Phase 3
Process S4
Activity S4.1

Step 22	Using the impact evaluation criteria as a guide, assign an impact value (high, medium, or low) to each active threat.

Phase 3
Process S4
Activity S4.3

Step 24	Using the probability evaluation criteria as a guide, assign a probability value (high, medium, or low) to each active threat. Document your confidence level in your probability estimate.

Phase 3
Process S5
Activity S5.2

Step 26	Transfer the stoplight status for each security practice area from the *Security Practices worksheet* to the "Security Practice Areas" section (Step 26) of the following worksheet.

Step 27	Select a mitigation approach (mitigate, defer, accept) for each active risk. For each risk that you decided to mitigate, circle one or more security practice areas for which you intend to implement mitigation activities.

Human Actors Using Network Access

Basic Risk Profile

Step 12

Threat

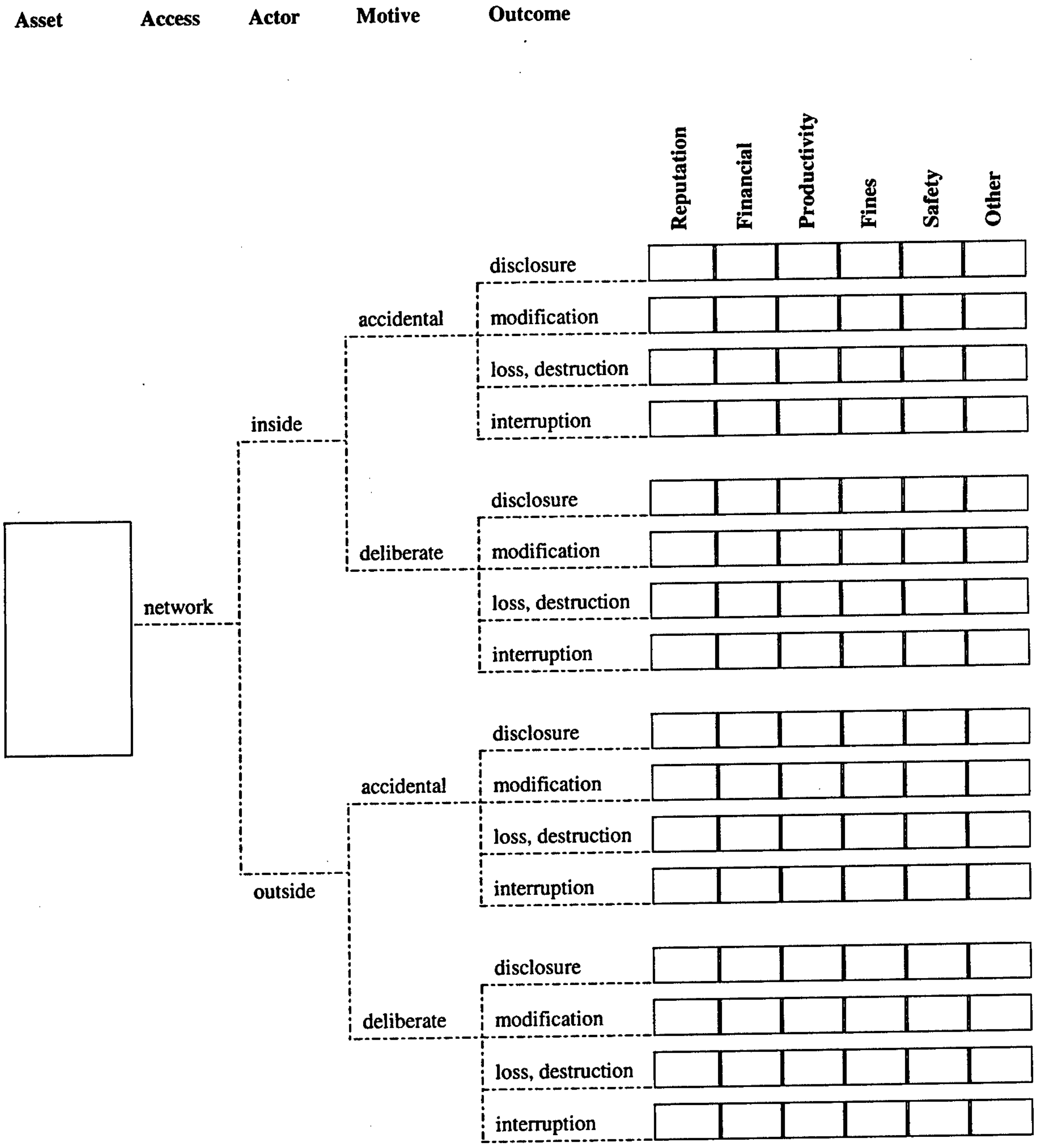
For which branches is there a non-negligible possibility of a threat to the asset? Mark these branches on the tree.

For which of the remaining branches is there a negligible possibility or no possibility of a threat to the asset? Do not mark these branches.

Step 22

Impact Values

What is the potential impact on the organization in each applicable area?



Asset	Access	Actor	Motive	Outcome	Reputation	Financial	Productivity	Fines	Safety	Other
□	network	inside	accidental	disclosure	□	□	□	□	□	□
				modification	□	□	□	□	□	□
				loss, destruction	□	□	□	□	□	□
				interruption	□	□	□	□	□	□
			deliberate	disclosure	□	□	□	□	□	□
				modification	□	□	□	□	□	□
				loss, destruction	□	□	□	□	□	□
				interruption	□	□	□	□	□	□
		outside	accidental	disclosure	□	□	□	□	□	□
				modification	□	□	□	□	□	□
				loss, destruction	□	□	□	□	□	□
				interruption	□	□	□	□	□	□
			deliberate	disclosure	□	□	□	□	□	□
				modification	□	□	□	□	□	□
				loss, destruction	□	□	□	□	□	□
				interruption	□	□	□	□	□	□

Risk Profile Worksheet for Applications: Network Access

Basic Risk Profile

Human Actors Using Network Access

Step 24

Probability

How likely is the threat to occur in the future? How confident are you in your estimate?

Step 26

Security Practice Areas

What is the stoplight status for each security practice area?

Step 27

Approach

What is your approach for addressing each risk?

Value	Confidence			Strategic						Operational											
	Very	Somewhat	Not At All	1. Sec Training	2. Sec Strategy	3. Sec Mgmt	4. Sec Policy & Reg	5. Coll Sec Mgmt	6. Cont Planning	7. Phys Acc Cntrl	8. Monitor Phys Sec	9. Sys & Net Mgmt	10. Monitor IT Sec	11. Authen & Auth	12. Vul Mgmt	13. Encryption	14. Sec Arch & Des	15. Incident Mgmt	Accept	Defer	Mitigate
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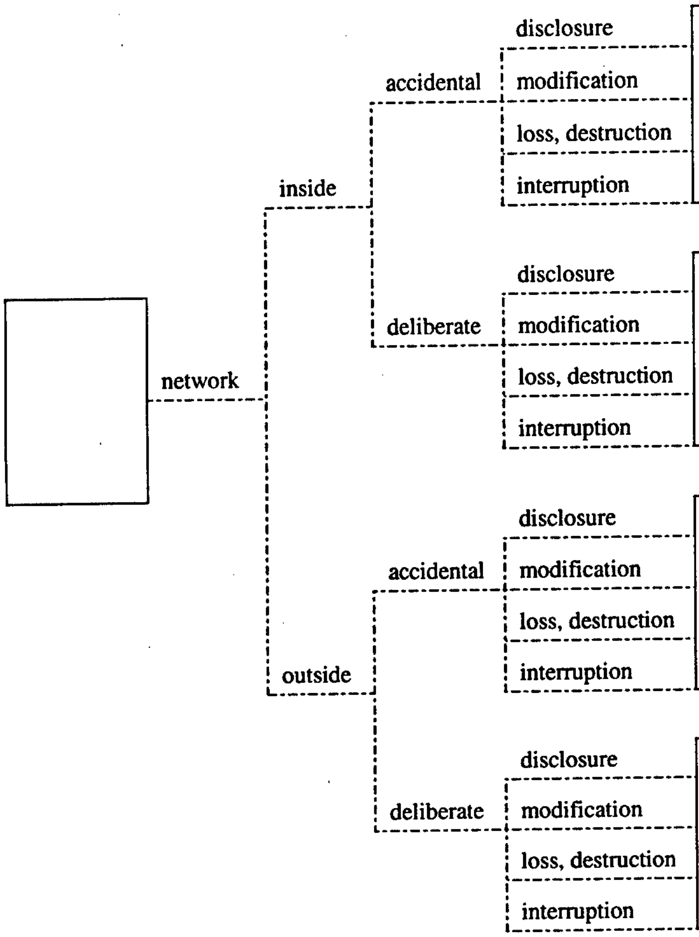
Human Actors Using Network Access

Threat Context

Step 13

Threat Actors

Which actors pose the biggest threats to this application via the network?



Insiders acting accidentally:

Insiders acting deliberately:

Outsiders acting accidentally:

Outsiders acting deliberately:

Threat Context

Human Actors Using Network Access

Step 14						Step 15			
Motive						History			
How strong is the actor's motive?			*How confident are you in this estimate?*			*How often has this threat occurred in the past?*	*How accurate are the data?*		
High	Medium	Low	Very	Somewhat	Not At All		Very	Somewhat	Not At All
▨			▨			_____ times in _____ years	□	□	□
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□	□	□	□	□	□	_____ times in _____ years	□	□	□

Step 16

Human Actors Using Network Access

Areas of Concern

Insiders Using Network Access

Give examples of how *insiders acting accidentally* could use network access to threaten this application.	
Give examples of how *insiders acting deliberately* could use network access to threaten this application.	

Outsiders Using Network Access

Give examples of how *outsiders acting accidentally* could use network access to threaten this application.	
Give examples of how *outsiders acting deliberately* could use network access to threaten this application.	

Areas of Concern

Insiders Using Network Access

Outsiders Using Network Access

4 Risk Profile Worksheet for Applications – Human Actors Using Physical Access

Phase 1
Process S2
Activity S2.3

Step 12

Complete the threat tree for *human actors using physical access*. Mark each branch of each tree for which there is a non-negligible possibility of a threat to the asset.

If you have difficulty interpreting a threat on the threat tree, review the description and examples of that threat in the *Threat Translation Guide* (see pp. 64-67 of this workbook).

Step 13

Record specific examples of threat actors on the *Risk Profile worksheet* for each applicable actor-motive combination.

Step 14

Record the strength of the motive for deliberate threats due to human actors. Also record how confident you are in your estimate of the strength of the actor's motive.

Step 15

Record how often each threat has occurred in the past. Also record how accurate you believe your data are.

Step 16

Record areas of concern for each source of threat where appropriate. An area of concern is a scenario defining how specific threats could affect the critical asset.

continued

Phase 3
Process S4
Activity S4.1

Step 22	Using the impact evaluation criteria as a guide, assign an impact value (high, medium, or low) to each active threat.

Phase 3
Process S4
Activity S4.3

Step 24	Using the probability evaluation criteria as a guide, assign a probability value (high, medium, or low) to each active threat. Document your confidence level in your probability estimate.

Phase 3
Process S5
Activity S5.2

Step 26	Transfer the stoplight status for each security practice area from the *Security Practices worksheet* to the "Security Practice Areas" section (Step 26) of the following worksheet.

Step 27	Select a mitigation approach (mitigate, defer, accept) for each active risk. For each risk that you decided to mitigate, circle one or more security practice areas for which you intend to implement mitigation activities.

Human Actors Using Physical Access

Basic Risk Profile

Step 12

Threat

For which branches is there a non-negligible possibility of a threat to the asset? Mark these branches on the tree.

For which of the remaining branches is there a negligible possibility or no possibility of a threat to the asset? Do not mark these branches.

Step 22

Impact Values

What is the potential impact on the organization in each applicable area?

Asset	Access	Actor	Motive	Outcome	Reputation	Financial	Productivity	Fines	Safety	Other
	physical	inside	accidental	disclosure						
				modification						
				loss, destruction						
				interruption						
			deliberate	disclosure						
				modification						
				loss, destruction						
				interruption						
		outside	accidental	disclosure						
				modification						
				loss, destruction						
				interruption						
			deliberate	disclosure						
				modification						
				loss, destruction						
				interruption						

Risk Profile Worksheet for Applications: Physical Access

Basic Risk Profile

Human Actors Using Physical Access

Step 24

Probability

How likely is the threat to occur in the future? How confident are you in your estimate?

Step 26

Security Practice Areas

What is the stoplight status for each security practice area?

Step 27

Approach

What is your approach for addressing each risk?

Value	Confidence			Strategic						Operational											
	Very	Somewhat	Not At All	1. Sec Training	2. Sec Strategy	3. Sec Mgmt	4. Sec Policy & Reg	5. Coll Sec Mgmt	6. Cont Planning	7. Phys Acc Cntrl	8. Monitor Phys Sec	9. Sys & Net Mgmt	10. Monitor IT Sec	11. Authen & Auth	12. Vul Mgmt	13. Encryption	14. Sec Arch & Des	15. Incident Mgmt	Accept	Defer	Mitigate
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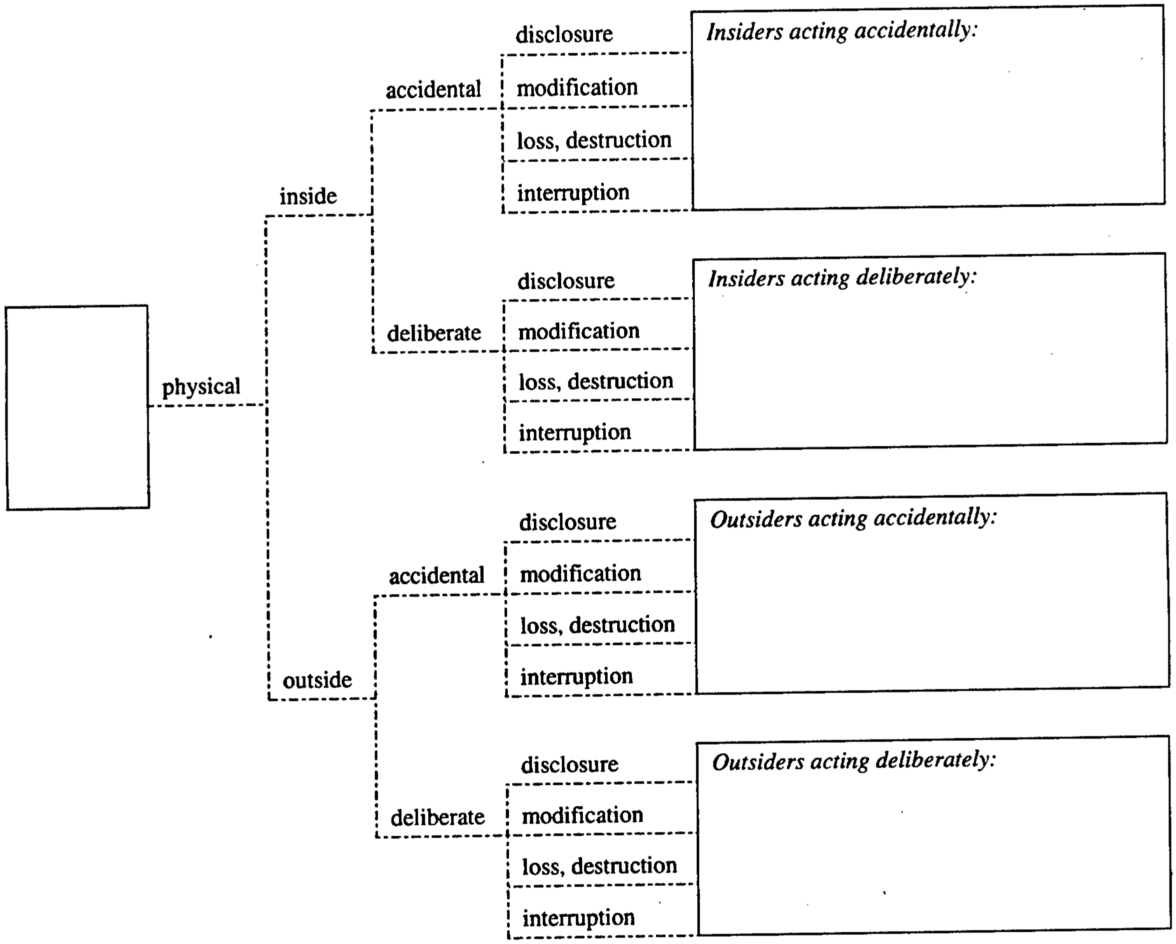
Human Actors Using Physical Access

Threat Context

Step 13

Threat Actors

Which actors pose the biggest threats to this application via physical means?



Insiders acting accidentally:

Insiders acting deliberately:

Outsiders acting accidentally:

Outsiders acting deliberately:

Risk Profile Worksheet for Applications: Physical Access

Threat Context

Human Actors Using Physical Access

Step 14

Step 15

Motive						History			
How strong is the actor's motive?			*How confident are you in this estimate?*			*How often has this threat occurred in the past?*	*How accurate are the data?*		
High	Medium	Low	Very	Somewhat	Not At All		Very	Somewhat	Not At All
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□	□	□	□	□	□	______ times in ______ years	□	□	□
□	□	□	□	□	□	______ times in ______ years	□	□	□
□	□	□	□	□	□	______ times in ______ years	□	□	□

Step 16

Human Actors Using Physical Access

Areas of Concern

Insiders Using Physical Access

Give examples of how *insiders acting accidentally* could use physical access to threaten this application.	
Give examples of how *insiders acting deliberately* could use physical access to threaten this application.	

Outsiders Using Physical Access

Give examples of how *outsiders acting accidentally* could use physical access to threaten this application.	
Give examples of how *outsiders acting deliberately* could use physical access to threaten this application.	

Risk Profile Worksheet for Applications: Physical Access

Areas of Concern

Insiders Using Physical Access

Outsiders Using Physical Access

5 Risk Profile Worksheet for Applications – System Problems

Phase 1
Process S2
Activity S2.3

Step 12

Complete the threat tree for *system problems*. Mark each branch of each tree for which there is a non-negligible possibility of a threat to the asset.

If you have difficulty interpreting a threat on the threat tree, review the description and examples of that threat in the *Threat Translation Guide* (see pp. 68-71 of this workbook).

Step 15

Record how often each threat has occurred in the past. Also record how accurate you believe your data are.

Step 16

Record areas of concern for each source of threat where appropriate. An area of concern is a scenario defining how specific threats could affect the critical asset.

continued

Phase 3
Process S4
Activity S4.1

Step 22	Using the impact evaluation criteria as a guide, assign an impact value (high, medium, or low) to each active threat.

Phase 3
Process S4
Activity S4.3

Step 24	Using the probability evaluation criteria as a guide, assign a probability value (high, medium, or low) to each active threat. Document your confidence level in your probability estimate.

Phase 3
Process S5
Activity S5.2

Step 26	Transfer the stoplight status for each security practice area from the *Security Practices worksheet* to the "Security Practice Areas" section (Step 26) of the following worksheet.

Step 27	Select a mitigation approach (mitigate, defer, accept) for each active risk. For each risk that you decided to mitigate, circle one or more security practice areas for which you intend to implement mitigation activities.

System Problems

Basic Risk Profile

Step 12

Threat

For which branches is there a non-negligible possibility of a threat to the asset? Mark these branches on the tree.

For which of the remaining branches is there a negligible possibility or no possibility of a threat to the asset? Do not mark these branches.

Step 22

Impact Values

What is the potential impact on the organization in each applicable area?

Asset	Actor	Outcome	Reputation	Financial	Productivity	Fines	Safety	Other
	software defects	disclosure						
		modification						
		loss, destruction						
		interruption						
	system crashes	disclosure						
		modification						
		loss, destruction						
		interruption						
	hardware defects	disclosure						
		modification						
		loss, destruction						
		interruption						
	malicious code (virus, worm, Trojan horse, back door)	disclosure						
		modification						
		loss, destruction						
		interruption						

Risk Profile Worksheet for Applications: System Problems

Basic Risk Profile

System Problems

Step 24

Probability

How likely is the threat to occur in the future? How confident are you in your estimate?

Step 26

Security Practice Areas

What is the stoplight status for each security practice area?

Step 27

Approach

What is your approach for addressing each risk?

Value	Confidence			Strategic						Operational											
	Very	Somewhat	Not At All	1. Sec Training	2. Sec Strategy	3. Sec Mgmt	4. Sec Policy & Reg	5. Coll Sec Mgmt	6. Cont Planning	7. Phys Acc Cntrl	8. Monitor Phys Sec	9. Sys & Net Mgmt	10. Monitor IT Sec	11. Authen & Auth	12. Vul Mgmt	13. Encryption	14. Sec Arch & Des	15. Incident Mgmt	Accept	Defer	Mitigate
										▨	▨			▨		▨			□	□	□
										▨	▨			▨		▨			□	□	□
										▨	▨			▨		▨			□	□	□
										▨	▨			▨		▨			□	□	□
										▨	▨					▨			□	□	□
										▨	▨					▨			□	□	□
										▨	▨					▨			□	□	□
										▨	▨					▨			□	□	□
										▨	▨			▨		▨			□	□	□
										▨	▨			▨		▨			□	□	□
										▨	▨			▨		▨			□	□	□
										▨	▨			▨		▨			□	□	□
										▨	▨								□	□	□
										▨	▨								□	□	□
										▨	▨								□	□	□
										▨	▨								□	□	□

System Problems

Threat Context

Step 15

		History			
		How often has this threat occurred in the past?	*How accurate are the data?*		
			Very	Somewhat	Not At All
software defects	disclosure	______ times in ______ years	□	□	□
	modification	______ times in ______ years	□	□	□
	loss, destruction	______ times in ______ years	□	□	□
	interruption	______ times in ______ years	□	□	□
system crashes	disclosure	______ times in ______ years	□	□	□
	modification	______ times in ______ years	□	□	□
	loss, destruction	______ times in ______ years	□	□	□
	interruption	______ times in ______ years	□	□	□
hardware defects	disclosure	______ times in ______ years	□	□	□
	modification	______ times in ______ years	□	□	□
	loss, destruction	______ times in ______ years	□	□	□
	interruption	______ times in ______ years	□	□	□
malicious code (virus, worm, Trojan horse, back door)	disclosure	______ times in ______ years	□	□	□
	modification	______ times in ______ years	□	□	□
	loss, destruction	______ times in ______ years	□	□	□
	interruption	______ times in ______ years	□	□	□

Threat Context

System Problems

Notes

What additional notes about each threat do you want to record?

Step 16

System Problems

Areas of Concern

Software Defects

Give examples of how *software defects* could threaten this application.

System Crashes

Give examples of how *system crashes* could threaten this application.

Hardware Defects

Give examples of how *hardware defects* could threaten this application.

Malicious Code

Give examples of how *malicious code* could threaten this application. (Consider viruses, worms, Trojan horses, back doors, others)

Risk Profile Worksheet for Applications: System Problems

Areas of Concern

Software Defects

System Crashes

Hardware Defects

Malicious Code

6 Risk Profile Worksheet for Applications – Other Problems

Phase 1

Process S2

Activity S2.3

Step 12	Complete the threat tree for *other problems*. Mark each branch of each tree for which there is a non-negligible possibility of a threat to the asset. If you have difficulty interpreting a threat on the threat tree, review the description and examples of that threat in the *Threat Translation Guide* (see pp. 72-77 of this workbook).

Step 15	Record how often each threat has occurred in the past. Also record how accurate you believe your data are.

Step 16	Record areas of concern for each source of threat where appropriate. An area of concern is a scenario defining how specific threats could affect the critical asset.

continued

Risk Profile Worksheet for Applications: Other

Phase 3
Process S4
Activity S4.1

Step 22	Using the impact evaluation criteria as a guide, assign an impact value (high, medium, or low) to each active threat.

Phase 3
Process S4
Activity S4.3

Step 24	Using the probability evaluation criteria as a guide, assign a probability value (high, medium, or low) to each active threat. Document your confidence level in your probability estimate.

Phase 3
Process S5
Activity S5.2

Step 26	Transfer the stoplight status for each security practice area from the *Security Practices worksheet* to the "Security Practice Areas" section (Step 26) of the following worksheet.

Step 27	Select a mitigation approach (mitigate, defer, accept) for each active risk. For each risk that you decided to mitigate, circle one or more security practice areas for which you intend to implement mitigation activities.

Other Problems

Basic Risk Profile

Step 12

Threat

For which branches is there a non-negligible possibility of a threat to the asset? Mark these branches on the tree.

For which of the remaining branches is there a negligible possibility or no possibility of a threat to the asset? Do not mark these branches.

Step 22

Impact Values

What is the potential impact on the organization in each applicable area?

Asset	Actor	Outcome	Reputation	Financial	Productivity	Fines	Safety	Other
□	power supply problems	disclosure	□	□	□	□	□	□
		modification	□	□	□	□	□	□
		loss, destruction	□	□	□	□	□	□
		interruption	□	□	□	□	□	□
	telecommunications problems or unavailability	disclosure	□	□	□	□	□	□
		modification	□	□	□	□	□	□
		loss, destruction	□	□	□	□	□	□
		interruption	□	□	□	□	□	□
	third-party problems or unavailability of third-party systems	disclosure	□	□	□	□	□	□
		modification	□	□	□	□	□	□
		loss, destruction	□	□	□	□	□	□
		interruption	□	□	□	□	□	□
	natural disasters (e.g., flood, fire, tornado)	disclosure	□	□	□	□	□	□
		modification	□	□	□	□	□	□
		loss, destruction	□	□	□	□	□	□
		interruption	□	□	□	□	□	□

Basic Risk Profile

Other Problems

Step 24

Probability

How likely is the threat to occur in the future? How confident are you in your estimate?

Step 26

Security Practice Areas

What is the stoplight status for each security practice area?

Step 27

Approach

What is your approach for addressing each risk?

Value	Confidence			Strategic						Operational											
	Very	Somewhat	Not At All	1. Sec Training	2. Sec Strategy	3. Sec Mgmt	4. Sec Policy & Reg	5. Coll Sec Mgmt	6. Cont Planning	7. Phys Acc Cntrl	8. Monitor Phys Sec	9. Sys & Net Mgmt	10. Monitor IT Sec	11. Authen & Auth	12. Vul Mgmt	13. Encryption	14. Sec Arch & Des	15. Incident Mgmt	Accept	Defer	Mitigate
												▨	▨	▨	▨	▨	▨		☐	☐	☐
												▨	▨	▨	▨	▨	▨		☐	☐	☐
												▨	▨	▨	▨	▨	▨		☐	☐	☐
												▨	▨	▨	▨	▨	▨		☐	☐	☐
												▨	▨	▨	▨	▨	▨		☐	☐	☐
												▨	▨	▨	▨	▨	▨		☐	☐	☐
												▨	▨	▨	▨	▨	▨		☐	☐	☐
												▨	▨	▨	▨	▨	▨		☐	☐	☐
										▨	▨	▨	▨	▨	▨	▨	▨		☐	☐	☐
										▨	▨	▨	▨	▨	▨	▨	▨		☐	☐	☐
										▨	▨	▨	▨	▨	▨	▨	▨		☐	☐	☐
										▨	▨	▨	▨	▨	▨	▨	▨		☐	☐	☐
												▨	▨	▨	▨	▨	▨	▨	☐	☐	☐
												▨	▨	▨	▨	▨	▨	▨	☐	☐	☐
												▨	▨	▨	▨	▨	▨	▨	☐	☐	☐
												▨	▨	▨	▨	▨	▨	▨	☐	☐	☐

Other Problems

Threat Context

Step 15

History

		How often has this threat occurred in the past?	*How accurate are the data?* **Very**	 **Somewhat**	 **Not At All**
power supply problems	disclosure	______ times in ______ years	❑	❑	❑
	modification	______ times in ______ years	❑	❑	❑
	loss, destruction	______ times in ______ years	❑	❑	❑
	interruption	______ times in ______ years	❑	❑	❑
telecommunications problems or unavailability	disclosure	______ times in ______ years	❑	❑	❑
	modification	______ times in ______ years	❑	❑	❑
	loss, destruction	______ times in ______ years	❑	❑	❑
	interruption	______ times in ______ years	❑	❑	❑
third-party problems or unavailability of third-party systems	disclosure	______ times in ______ years	❑	❑	❑
	modification	______ times in ______ years	❑	❑	❑
	loss, destruction	______ times in ______ years	❑	❑	❑
	interruption	______ times in ______ years	❑	❑	❑
natural disasters (e.g., flood, fire, tornado)	disclosure	______ times in ______ years	❑	❑	❑
	modification	______ times in ______ years	❑	❑	❑
	loss, destruction	______ times in ______ years	❑	❑	❑
	interruption	______ times in ______ years	❑	❑	❑

Threat Context

Other Problems

Notes

What additional notes about each threat do you want to record?

Step 16

Other Problems

Areas of Concern

Power Supply Problems

Give examples of how *power supply problems* could threaten this application.

Telecommunications Problems

Give examples of how *telecommunications problems* could threaten this application.

Third-Party Problems

Give examples of how *third-party problems* could threaten this application.

Natural Disasters

Give examples of how *natural disasters* could threaten this application.

Areas of Concern

Power Supply Problems

Telecommunications Problems

Third-Party Problems

Natural Disasters

Other Problems (cont.)

Basic Risk Profile

Step 12

Threat

For which branches is there a non-negligible possibility of a threat to the asset? Mark these branches on the tree.

For which of the remaining branches is there a negligible possibility or no possibility of a threat to the asset? Do not mark these branches.

Step 22

Impact Values

What is the potential impact on the organization in each applicable area?

Asset	Actor	Outcome	Reputation	Financial	Productivity	Fines	Safety	Other
	physical configuration or arrangement of buildings, offices, or equipment	disclosure						
		modification						
		loss, destruction						
		interruption						
		disclosure						
		modification						
		loss, destruction						
		interruption						
		disclosure						
		modification						
		loss, destruction						
		interruption						
		disclosure						
		modification						
		loss, destruction						
		interruption						

Basic Risk Profile

Other Problems (cont.)

Step 24

Probability

How likely is the threat to occur in the future? How confident are you in your estimate?

Step 26

Security Practice Areas

What is the stoplight status for each security practice area?

Step 27

Approach

What is your approach for addressing each risk?

Value	Confidence	Strategic						Operational											
	Very Somewhat Not At All	1. Sec Training	2. Sec Strategy	3. Sec Mgmt	4. Sec Policy & Reg	5. Coll Sec Mgmt	6. Cont Planning	7. Phys Acc Cntrl	8. Monitor Phys Sec	9. Sys & Net Mgmt	10. Monitor IT Sec	11. Authen & Auth	12. Vul Mgmt	13. Encryption	14. Sec Arch & Des	15. Incident Mgmt	Accept	Defer	Mitigate
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□
	|--------|--------|																□	□	□

Other Problems (cont.)

Threat Context

Step 15

History

			How often has this threat occurred in the past?	How accurate are the data?		
				Very	**Somewhat**	**Not At All**
	physical configuration or arrangement of buildings, offices, or equipment	disclosure	______ times in ______ years	□	□	□
		modification	______ times in ______ years	□	□	□
		loss, destruction	______ times in ______ years	□	□	□
		interruption	______ times in ______ years	□	□	□
		disclosure	______ times in ______ years	□	□	□
		modification	______ times in ______ years	□	□	□
		loss, destruction	______ times in ______ years	□	□	□
		interruption	______ times in ______ years	□	□	□
		disclosure	______ times in ______ years	□	□	□
		modification	______ times in ______ years	□	□	□
		loss, destruction	______ times in ______ years	□	□	□
		interruption	______ times in ______ years	□	□	□
		disclosure	______ times in ______ years	□	□	□
		modification	______ times in ______ years	□	□	□
		loss, destruction	______ times in ______ years	□	□	□
		interruption	______ times in ______ years	□	□	□

Threat Context

Other Problems (cont.)

Notes

What additional notes about each threat do you want to record?

Step 16

Other Problems (cont.)

Areas of Concern

Physical Configuration Problems

Give examples of how *physical configuration of buildings, offices, or equipment* could threaten this application.

Give examples of how

____

could threaten this application.

Give examples of how

____

could threaten this application.

Give examples of how

____

could threaten this application.

Areas of Concern

Physical Configuration Problems

7 Network Access Paths Worksheet

Phase 2
Process S3
Activity S3.1

Step 17

Select the system of interest for each critical asset (i.e., the system most closely related to the critical asset).

Step 18a

Review paths used to access each critical asset, and select key classes of components related to each critical asset.

Determine which classes of components are part of the system of interest.

Step 18b

Determine which classes of components serve as intermediate access points (i.e., which components are used to transmit information and applications from the system of interest to people).

Step 18c

Determine which classes of components, both internal and external to the organization's networks, are used by people (e.g., users, attackers) to access the system.

Step 18d

Determine where information from the system of interest is stored for backup purposes.

Step 18e

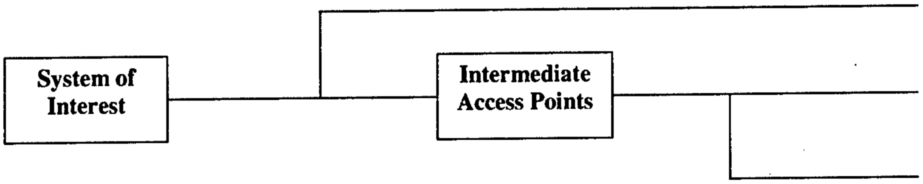
Determine which other systems access information or applications from the system of interest and which other classes of components can be used to access critical information or services from the system of interest.

Step 17

System of Interest

What system or systems are most closely related to the critical asset?

Access Points



Step 18a

System of Interest

Which of the following classes of components are part of the system of interest?

- □ Servers
- □ Internal Networks
- □ On-Site Workstations
- □ Others (list)

Step 18b

Intermediate Access Points

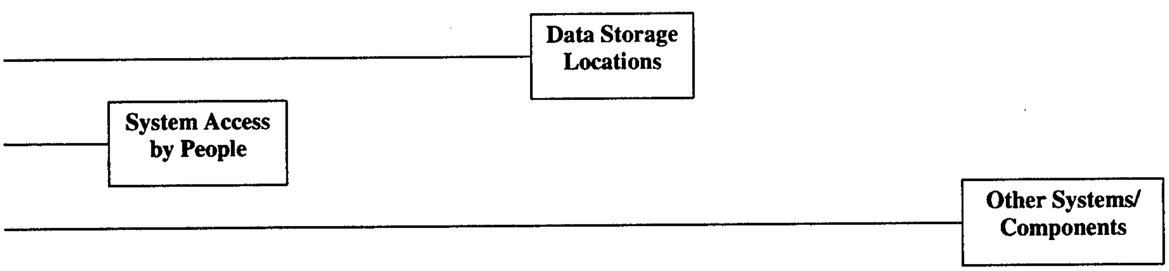
Which of the following classes of components are used to transmit information and applications from the system of interest to people?

Which classes of components could serve as intermediate access points?

- □ Internal Networks
- □ External Networks
- □ Others (list)

Note: *When you select a key class of components, make sure that you also document any relevant subclasses or specific examples when appropriate.*

Access Points



Step 18c

System Access by People

From which of the following classes of components can people (e.g., users, attackers) access the system of interest?

Consider access points both internal and external to your organization's networks.

□ On-Site Workstations

□ Laptops

□ PDAs/Wireless Components

□ Home/External Workstations

□ Others (list)

Step 18d

Data Storage Locations

On which classes of components is information from the system of interest stored for backup purposes?

□ Storage Devices

□ Others (list)

Step 18e

Other Systems and Components

Which other systems access information or applications from the system of interest?

Which other classes of components can be used to access critical information or applications from the system of interest?

□ ______________________

□ ______________________

□ ______________________

8 Threat Translation Guide

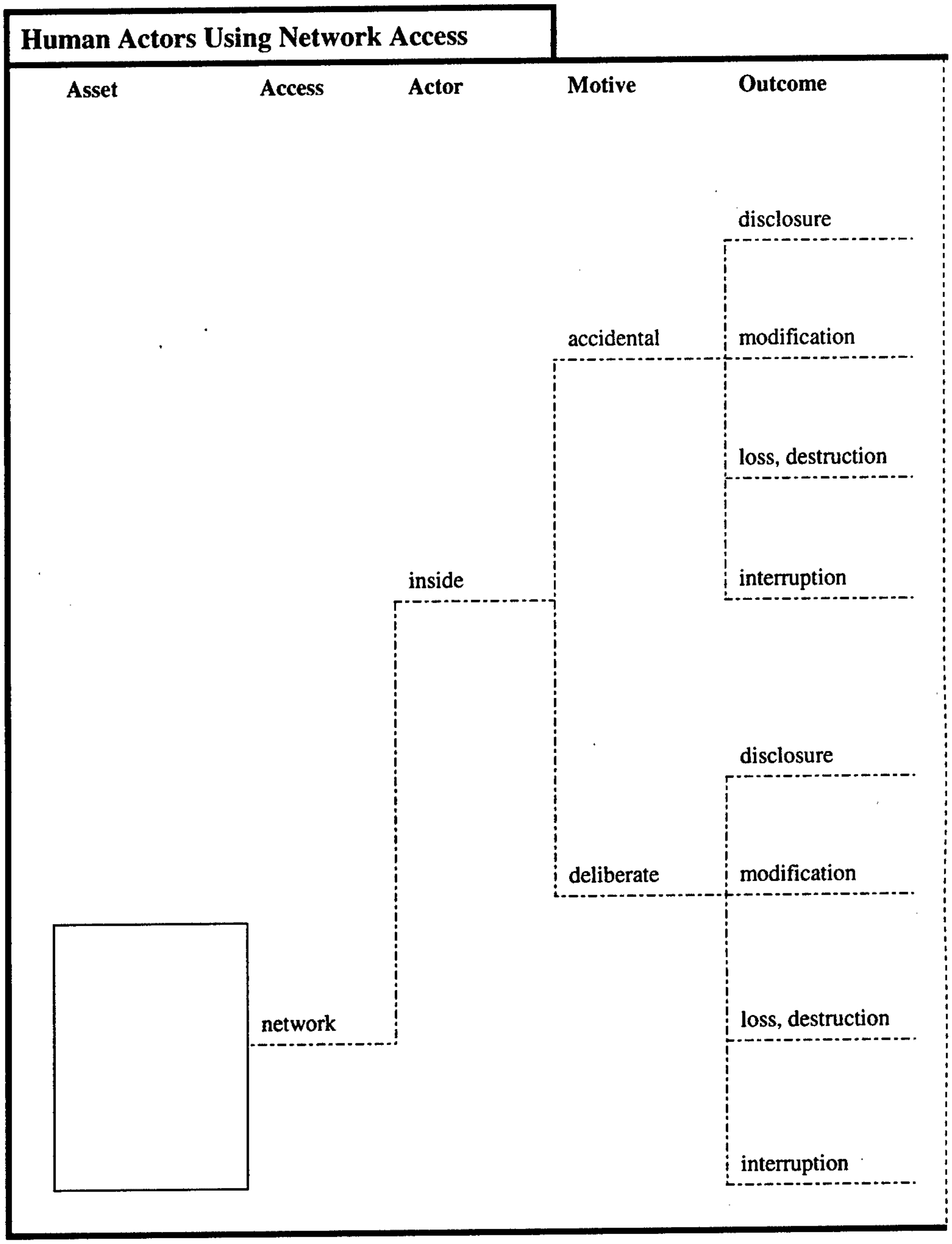
Phase 1
Process S2
Activity S2.3

Threat Translation Guide

The *Threat Translation Guide* describes each branch of an asset-based threat tree. If you have difficulty understanding the types of threats represented by a branch, you can use this guide to decipher the meaning of that branch.

You will find asset-based threat trees for the following sources of threat:

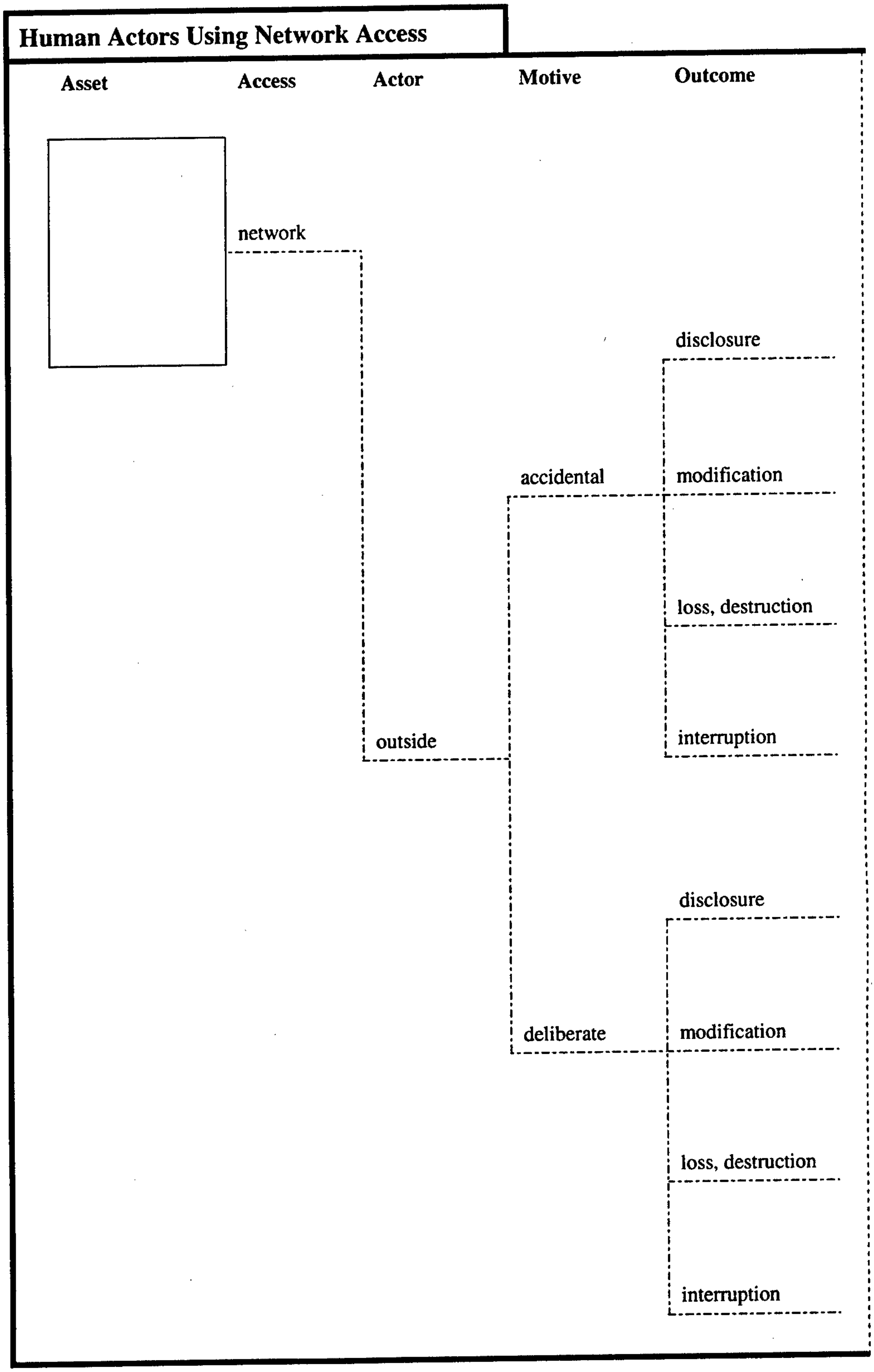
Source of Threat	**Page**
Human actors using network access	60-63
Human actors using physical access	64-67
System problems	68-71
Other problems	72-77



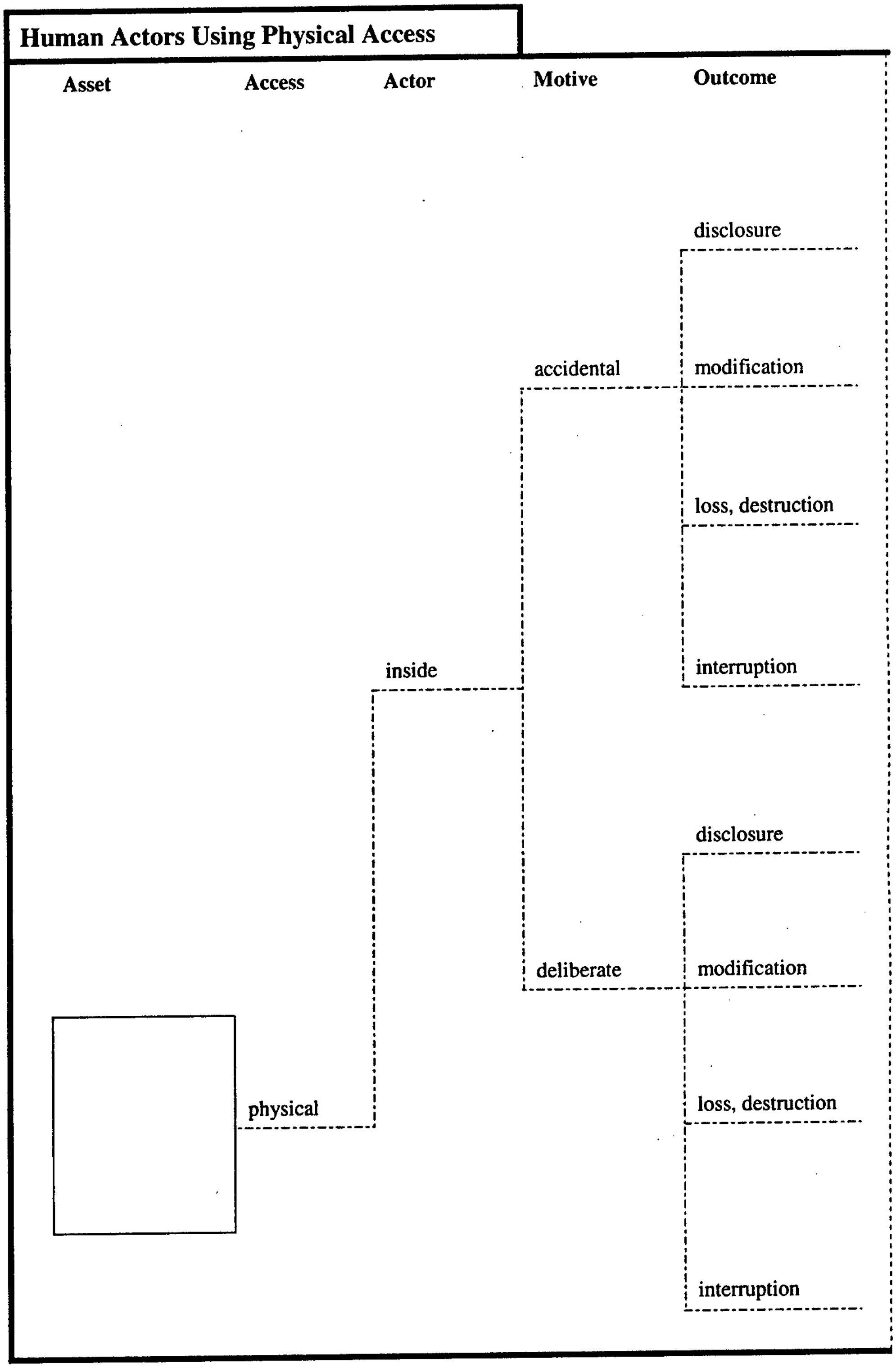
Human Actors Using Network Access

Description	Example
A staff member without malicious intent who has legitimate access to the computing infrastructure accidentally views confidential information on an important system.	Incorrect file permissions enable a staff member to accidentally access a restricted personnel database.
A staff member without malicious intent who has legitimate access to the computing infrastructure accidentally modifies information on an important system.	A staff member accidentally enters incorrect financial data into a customer database.
A staff member without malicious intent who has legitimate access to the computing infrastructure accidentally loses or destroys information on an important system.	A staff member deletes an important customer file by mistake.
A staff member without malicious intent who has legitimate access to the computing infrastructure accidentally interrupts access to an important system.	A staff member who is not computer savvy inadvertently crashes an important system.
A staff member with malicious intent who has legitimate access to the computing infrastructure exploits that access to deliberately view confidential information on an important system.	A staff member uses access to a restricted personnel database to deliberately view information in that database that is restricted by policy.
A staff member with malicious intent who has legitimate access to the computing infrastructure exploits that access to deliberately modify information on an important system.	A staff member responsible for data entry deliberately enters incorrect customer information into a database.
A staff member with malicious intent who has legitimate access to the computing infrastructure exploits that access to deliberately lose or destroy information on an important system.	A staff member with access to design documents for a new product deliberately deletes the files that contain those design documents.
A staff member with malicious intent who has legitimate access to the computing infrastructure exploits that access to deliberately interrupt access to an important system.	A staff member uses legitimate access to the computing infrastructure to launch a denial-of-service attack on an important system.

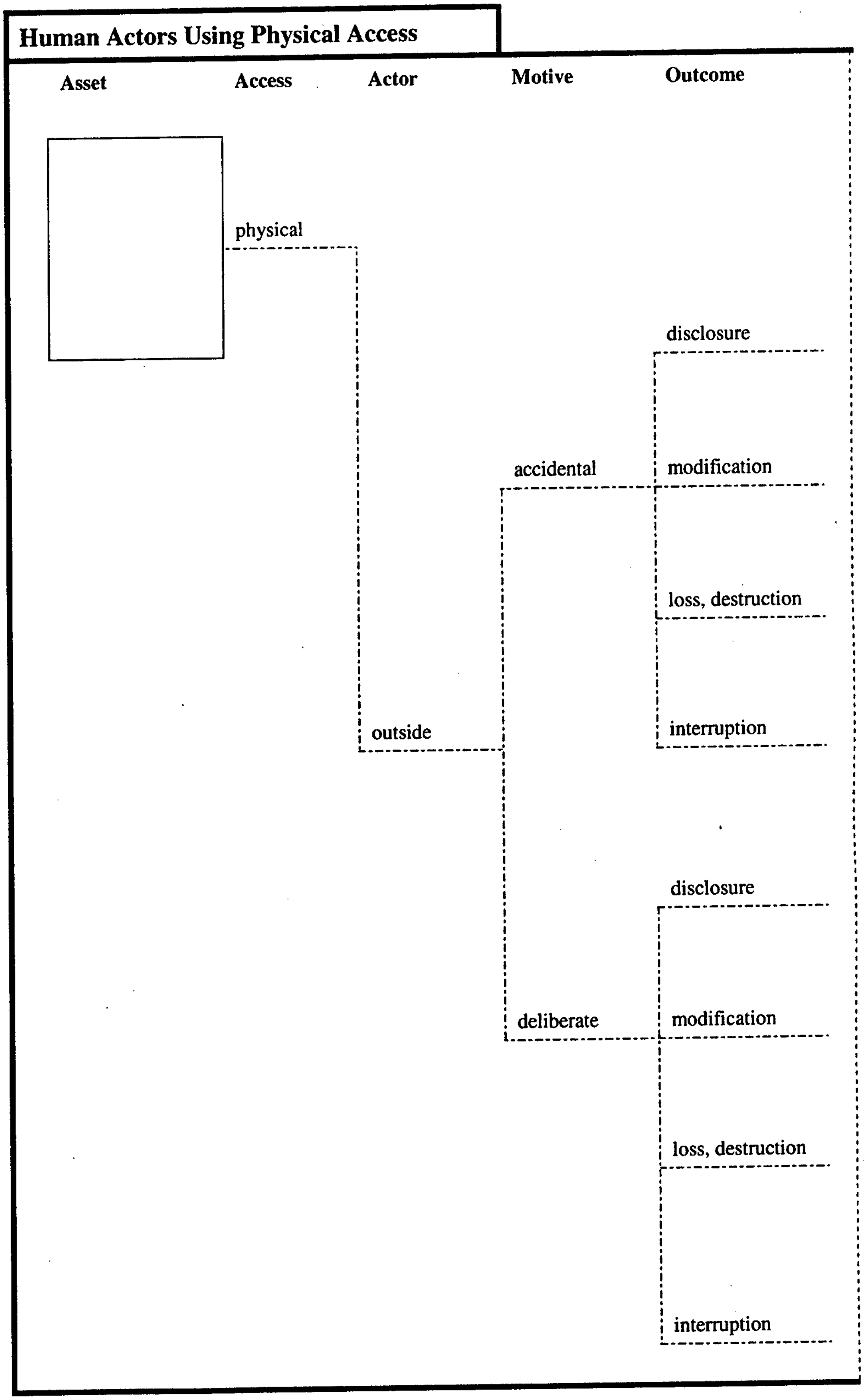
Human Actors Using Network Access



Description	Example
An outsider without malicious intent gains access to your computing infrastructure (legitimately or by accident) and views confidential data on a system.	Temporary employees are given access to your computing infrastructure to help with an increased workload. While performing their job duties, one of them accidentally views confidential personnel data.
An outsider without malicious intent gains access to your computing infrastructure (legitimately or by accident) and accidentally modifies information on a system.	Temporary employees are given access to your computing infrastructure to help with an increased workload. While performing their job duties, one of them accidentally modifies important customer data.
An outsider without malicious intent gains access to your computing infrastructure (legitimately or by accident) and loses or destroys information on a system.	Temporary employees are given access to your computing infrastructure to help with an increased workload. While performing their job duties, one of them accidentally loses or destroys financial data.
An outsider without malicious intent gains access to your computing infrastructure (legitimately or by accident) and accidentally interrupts access to a system.	Temporary employees are given access to your computing infrastructure to help with an increased workload. While performing their job duties, one of them accidentally crashes an important system.
An attacker with malicious intent deliberately exploits vulnerabilities in the computing infrastructure to view confidential information.	A corporate spy exploits vulnerabilities in the computing infrastructure to gain unauthorized access to a key business system. The spy uses that access to view confidential customer information on the system.
An attacker with malicious intent deliberately exploits vulnerabilities in the computing infrastructure to modify information.	A corporate spy exploits vulnerabilities in the computing infrastructure to gain unauthorized access to a key business system. The spy uses that access to modify financial data on the system.
An attacker with malicious intent deliberately exploits vulnerabilities in the computing infrastructure to lose or destroy information.	A corporate spy exploits vulnerabilities in the computing infrastructure to gain unauthorized access to a key business system. The spy uses that access to lose or destroy a new product design on the system.
An attacker with malicious intent deliberately exploits vulnerabilities in the computing infrastructure to interrupt access to a system.	A corporate spy exploits vulnerabilities in the computing infrastructure to gain unauthorized access to an airline's scheduling system. The spy uses that access to crash the system and prevent real-time updates.

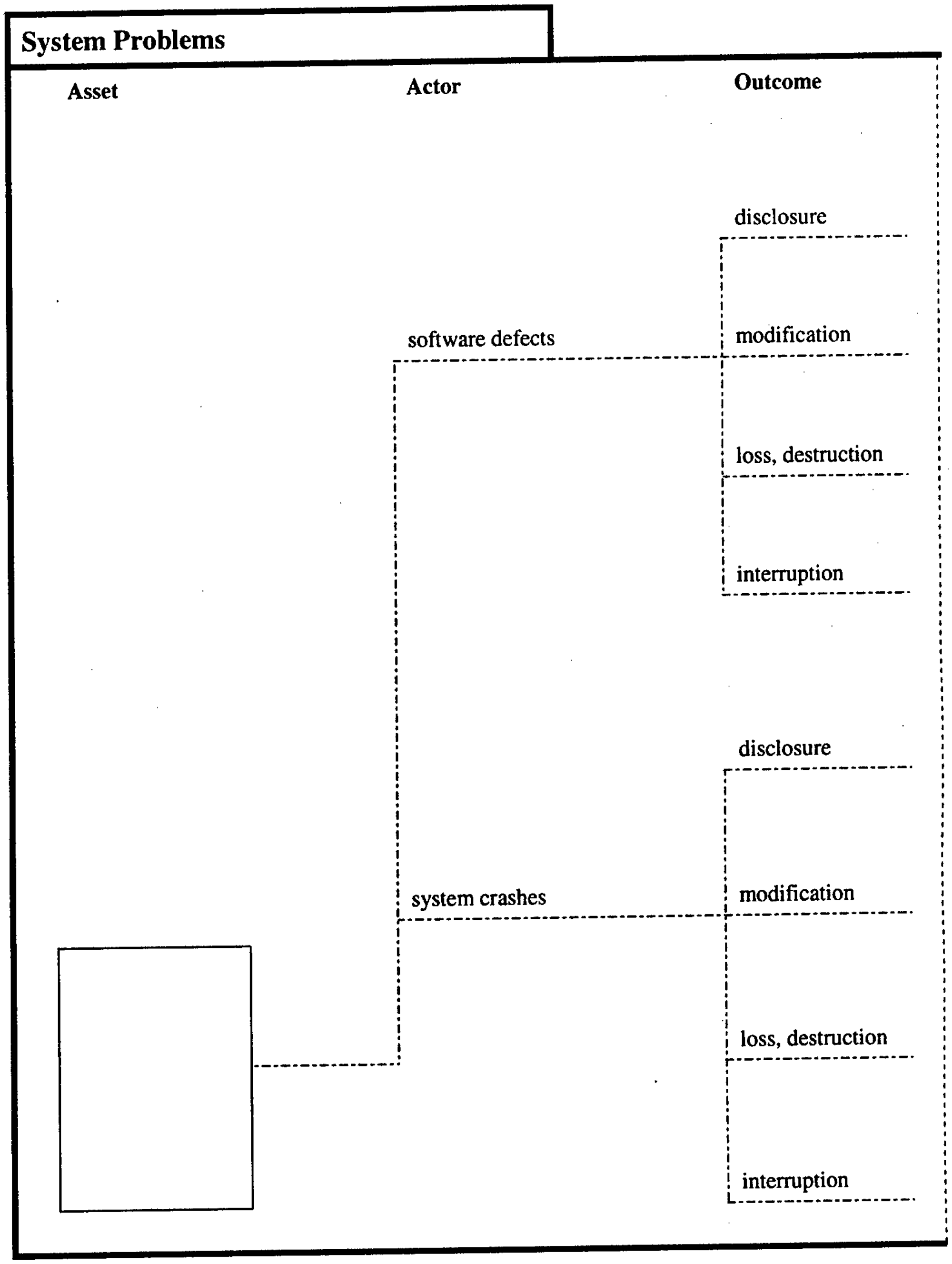

Human Actors Using Physical Access
Asset
Access
Actor
Motive
Outcome
physical
inside
accidental
deliberate
disclosure
modification
loss, destruction
interruption
disclosure
modification
loss, destruction
interruption

Description	Example
A staff member without malicious intent accidentally views confidential information after gaining physical access to a system, one of its components, or a physical copy of the information.	A staff member accidentally sees confidential information on (1) a colleague's computer screen or (2) a printout on a colleague's desk.
A staff member without malicious intent accidentally modifies information after gaining physical access to a system, one of its components, or a physical copy of the information.	A staff member modifies information by (1) accidentally altering information on a colleague's computer while using it for another purpose or (2) accidentally taking a page of a printout on a colleague's desk.
A staff member without malicious intent accidentally loses or destroys information after gaining physical access to a system, one of its components, or a physical copy of the information.	A staff member loses or destroys information by (1) accidentally deleting information from a colleague's computer while using it or (2) shredding a paper accidentally taken from a colleague's desk.
A staff member without malicious intent interrupts access to a system or information by accidentally using physical access to a system, one of its components, or a physical copy of the information to prevent others from accessing the system or information.	A staff member interrupts access to a system by (1) accidentally crashing the system while accessing it from a colleague's computer or (2) locking the keys inside an office where a physical file is stored.
A staff member with malicious intent deliberately views confidential information by breeching physical security and accessing components of the computing infrastructure or a physical copy of the information.	A staff member uses unauthorized access to a physically restricted area of the building to deliberately (1) view confidential information on a computer or (2) read a confidential memo lying on a desk.
A staff member with malicious intent deliberately modifies information by breeching physical security and accessing components of the computing infrastructure or a physical copy of the information.	A staff member uses unauthorized access to a physically restricted area of the building to deliberately (1) modify information on a computer or (2) modify a physical file lying on a desk.
A staff member with malicious intent deliberately loses or destroys information by breeching physical security and accessing components of the computing infrastructure or a physical copy of the information.	A staff member uses unauthorized access to a physically restricted area of the building to deliberately (1) delete information on a computer or (2) destroy a physical file lying on a desk.
A staff member with malicious intent deliberately interrupts access to an important system or information by breeching physical security to a system, one of its components, or a physical copy of the information and using that physical access to prevent others from accessing the system or information.	A staff member uses unauthorized access to a physically restricted area of the building to (1) gain access to and then deliberately crash an important business system or (2) jam the door and prevent others from physically accessing the systems and information located in that area of the building.



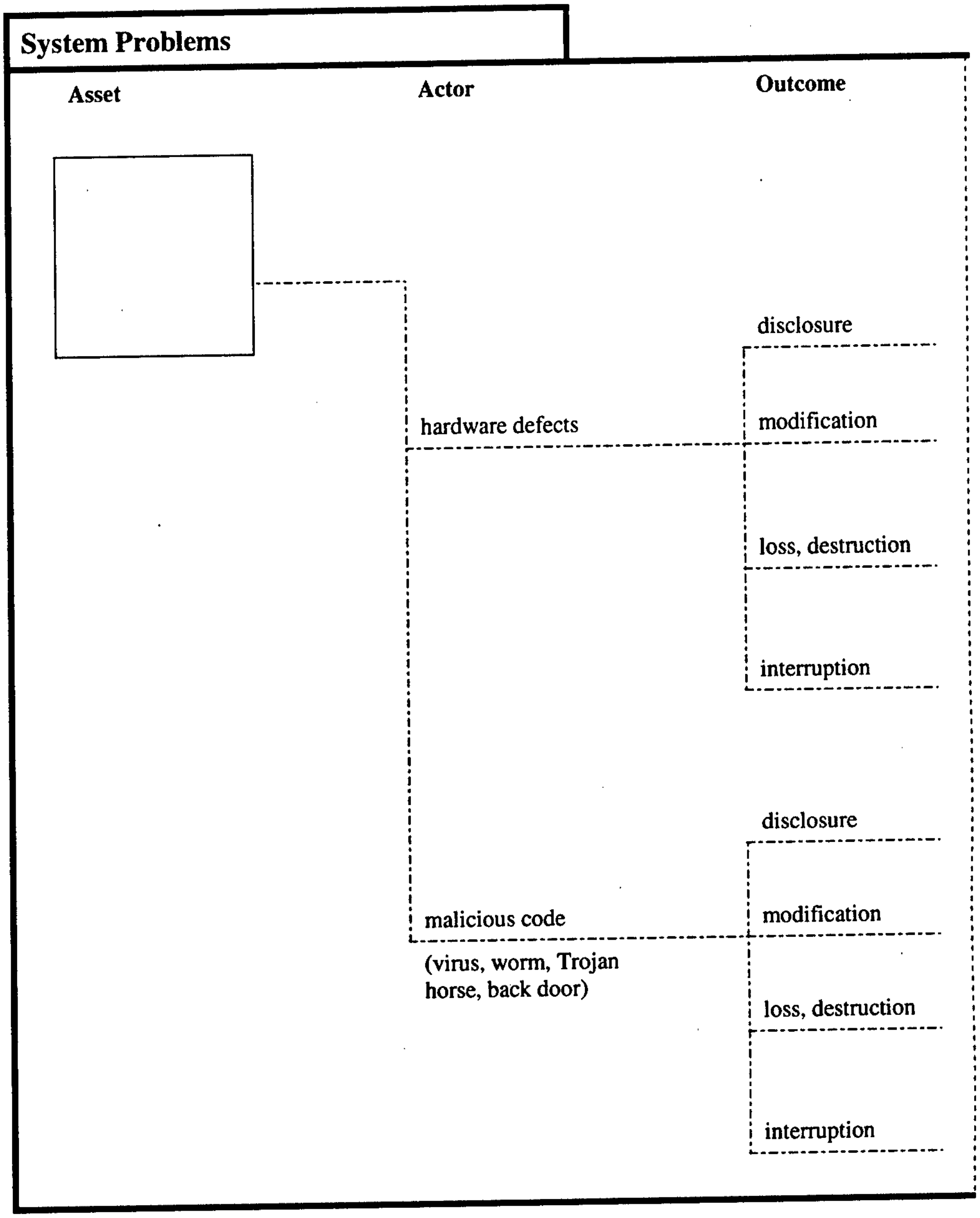
Human Actors Using Physical Access

Description	Example
An outsider without malicious intent gains physical access to your computing infrastructure or a physical copy of information and uses that access to view confidential information accidentally.	A consultant is given access to a staff member's office and accidentally sees confidential information on (1) a staff member's computer screen or (2) a printout on a staff member's desk.
An outsider without malicious intent gains physical access to your computing infrastructure or a physical copy of information and uses that access to modify information accidentally.	A consultant is given access to the computer room and (1) accidentally makes the wrong change to a configuration file on a server or (2) accidentally records the wrong information in a maintenance log.
An outsider without malicious intent gains physical access to your computing infrastructure or a physical copy of information and uses that access to lose or destroy information accidentally.	A consultant configuring one of your servers is given access to the computer room and accidentally (1) destroys an important electronic file or (2) throws away an important piece of system documentation.
An outsider without malicious intent gains physical access to your computing infrastructure or a physical copy of information and uses that access to accidentally prevent others from accessing the information.	A consultant configuring one of your servers is given access to the computer room and accidentally (1) crashes a system while accessing it or (2) locks the keys to the computer room inside it after he or she leaves.
An attacker with malicious intent deliberately views confidential information by breeching physical security and accessing components of the computing infrastructure or a physical copy of the information.	A corporate spy poses as a member of the cleaning crew to gain unauthorized physical access to a competitor's site and view confidential information either (1) on a key business system or (2) in a physical file.
An attacker with malicious intent deliberately modifies information by breeching physical security and accessing components of the computing infrastructure or a physical copy of the information.	A corporate spy poses as a member of the cleaning crew to gain unauthorized physical access to a competitor's site and modify financial information either (1) on a key business system or (2) in a physical file.
An attacker with malicious intent deliberately loses or destroys information by breeching physical security and accessing components of the computing infrastructure or a physical copy of the information.	A corporate spy poses as a member of the cleaning crew to gain unauthorized physical access to a competitor's site and destroy customer information either (1) on a key business system or (2) in a physical file.
An attacker with malicious intent deliberately interrupts access to an important system or information by breeching physical security to a system, one of its components, or a physical copy of the information and by using that physical access to prevent others from accessing the system or information.	A corporate spy poses as a member of the cleaning crew to gain unauthorized physical access to a competitor's site and (1) deliberately crashes an important business system or (2) jams the door to prevent others from physically accessing the systems and information located in an area of the building.



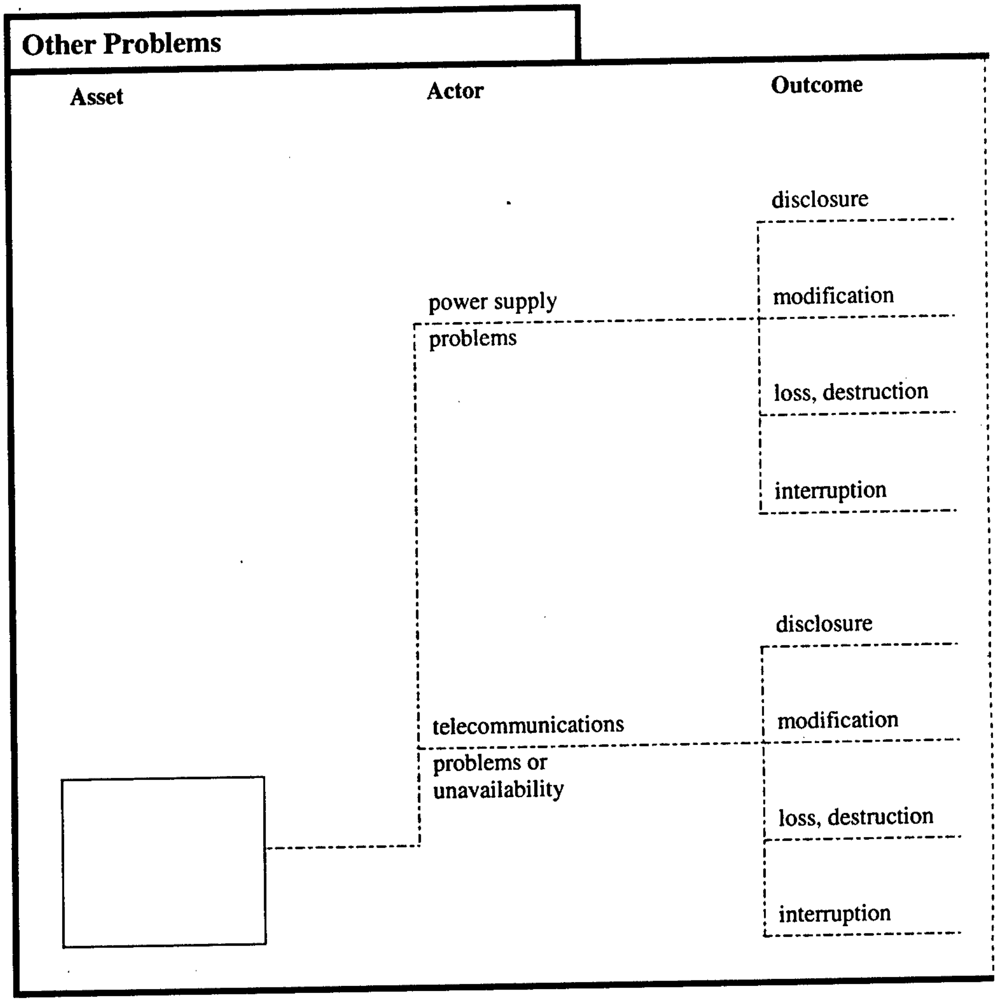
* Blank lines indicate unusual or extremely rare possibilities.

Description	Example*
A software defect results in disclosure of information to unauthorized parties.	A defect in a computer's operating system changes file access permissions to permit world read and write permissions on certain files and directories.
A software defect results in modification of information on a system.	A custom software application incorrectly performs mathematical operations on data, affecting the integrity of the results.
A software defect results in the loss or destruction of information on a system.	A word processing application is known to crash computers periodically because of a problem with a specific command sequence, destroying any information that was not saved.
A software defect results in a system crash, preventing access to the system.	A word processing application is known to crash computers periodically because of a problem with a specific command sequence, preventing access to that computer.
A system crashes for unknown reasons (i.e., it cannot be traced to a software defect, hardware defect, malicious code, or actions by people), resulting in disclosure of information to unauthorized parties.	---
A system crashes for unknown reasons (i.e., it cannot be traced to a software defect, hardware defect, malicious code, or actions by people), resulting in modification of information on that system.	A system crashes during a lengthy update of a financial database, corrupting the information in the database.
A system crashes for unknown reasons (i.e., it cannot be traced to a software defect, hardware defect, malicious code, or actions by people), resulting in the loss or destruction of information on that system.	A customer database system frequently crashes, destroying any information that was not saved at the time of the crash.
A system crashes for unknown reasons (i.e., it cannot be traced to a software defect, hardware defect, malicious code, or actions by people), resulting in interruption of access to that system.	An email server crashes, resulting in interruption of user access to email.



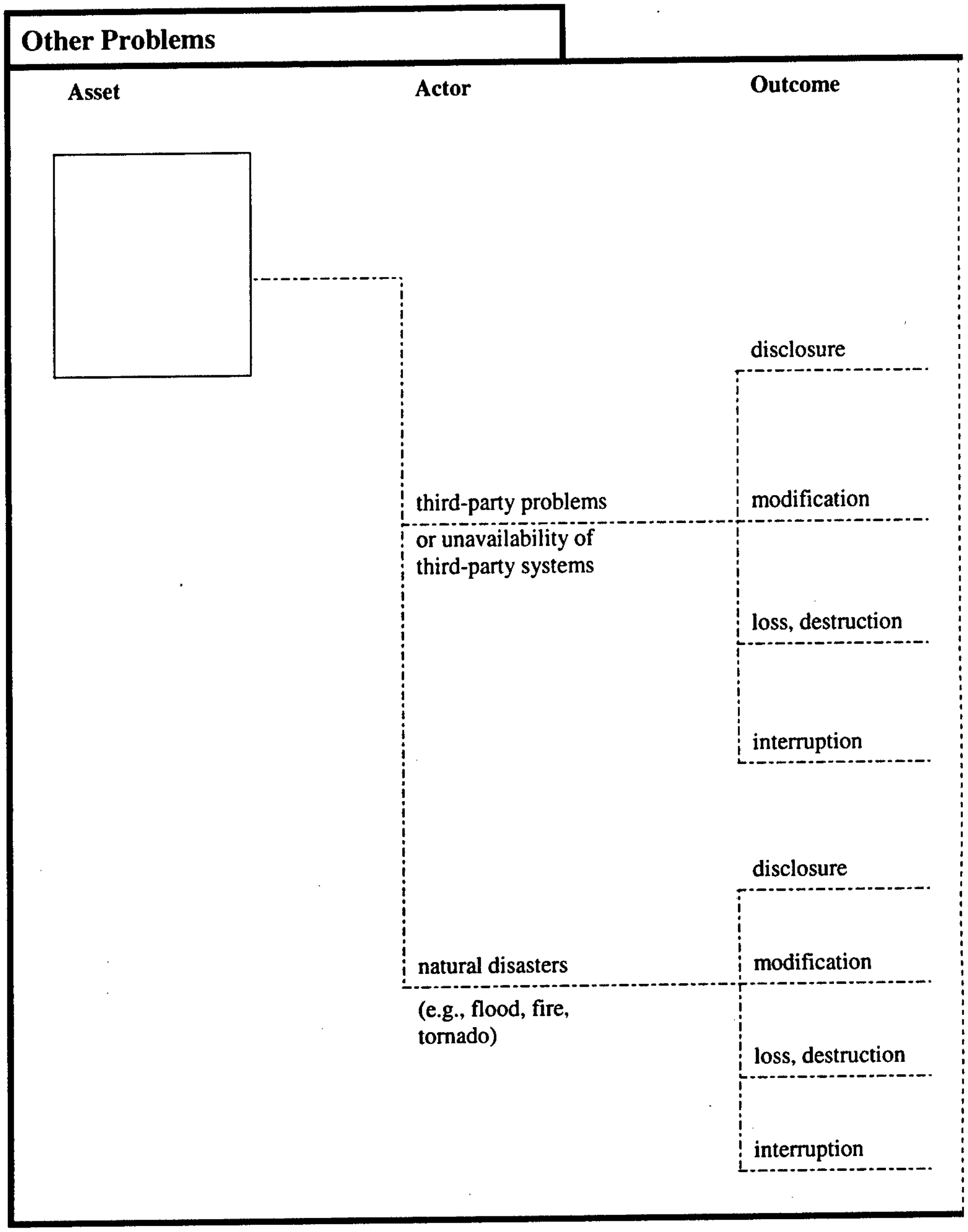
* Blank lines indicate unusual or extremely rare possibilities.

Description	Example*
A hardware defect results in disclosure of information to unauthorized parties.	---
A hardware defect results in modification of information on a system.	A disk drive develops a hardware problem that affects the integrity of a database that is stored on the disk.
A hardware defect results in the loss or destruction of information on a system.	A disk drive develops a hardware problem that ends up destroying the information on the disk. Files can be retrieved only from backups.
A hardware defect results in a system crash, preventing access to the system.	A disk drive develops a hardware problem, preventing access to any information on the disk until the problem is corrected.
A system is affected by malicious code (virus, worm, Trojan horse, back door) that enables unauthorized parties to view information.	A back door on a system enables unauthorized people to access the system and view customer credit card information on that system.
A system is affected by malicious code (virus, worm, Trojan horse, back door) that modifies information on that system.	A system is infected with a virus that modifies a process control application on the computer's disk drive.
A system is affected by malicious code (virus, worm, Trojan horse, back door) that deletes information on that system.	A system is infected with a virus that deletes all information on the computer's disk drive.
A system is affected by malicious code (virus, worm, Trojan horse, back door) that results in the system crashing.	A system is infected with a virus that is spread via email, slowing network traffic and creating a denial-of-services attack.



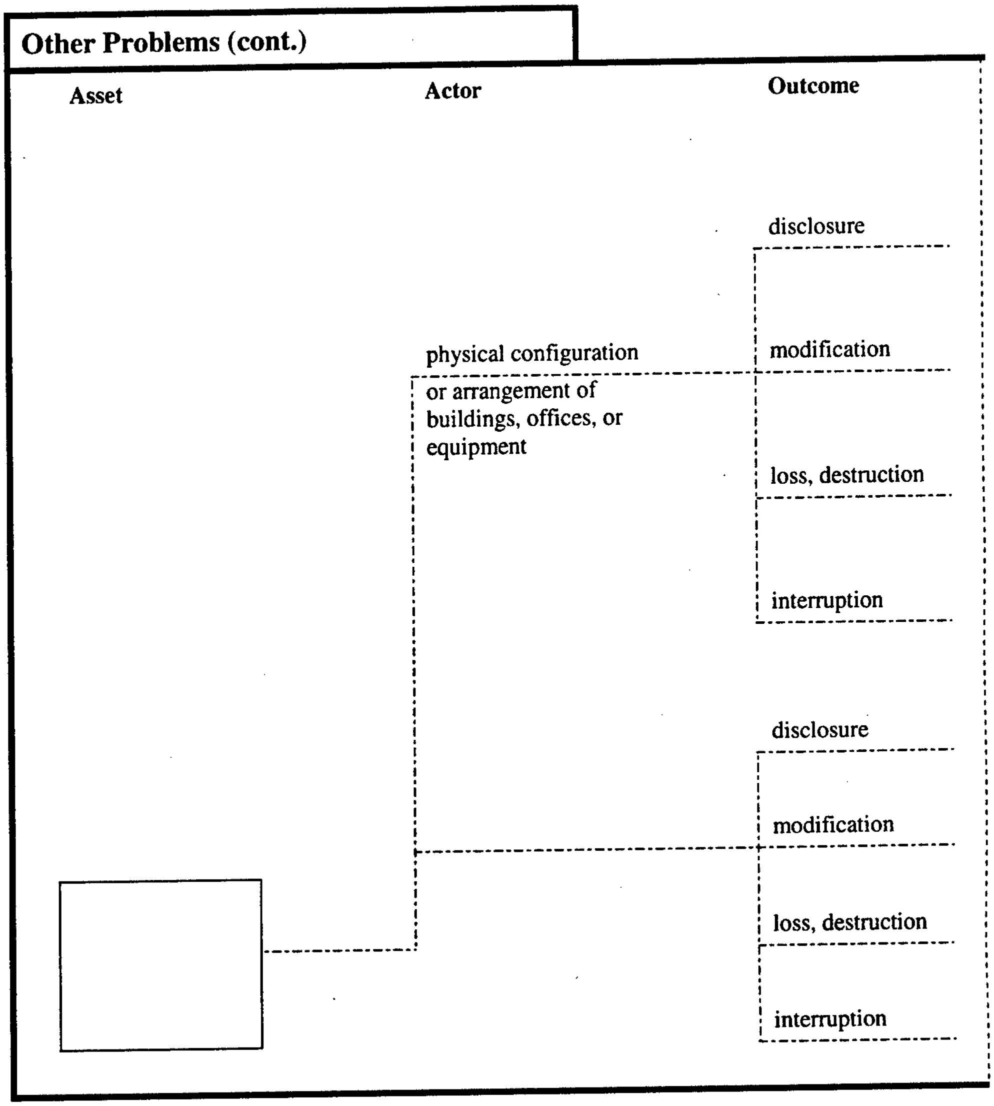
* Blank lines indicate unusual or extremely rare possibilities.

Description	Example*
Problems with the power supply lead to disclosure of information to unauthorized parties.	---
Problems with the power supply lead to modification of information on a system.	---
Problems with the power supply lead to loss or destruction of information on a system.	A power outage results in loss of any information that was not saved at the time of the outage.
Problems with the power supply lead to interruption of access to a system.	A power outage prevents access to all key business systems.
Unavailability of telecommunications services leads to disclosure of information to unauthorized parties.	---
Unavailability of telecommunications services leads to modification of information on a system.	---
Unavailability of telecommunications services leads to loss or destruction of information on a system.	---
Unavailability of telecommunications services leads to interruption of access to a system.	The unavailability of the telecommunications link prevents access to a key business system located at a remote site.



* Blank lines indicate unusual or extremely rare possibilities.

Description	Example*
Problems with services provided by third parties (e.g., maintenance of systems) lead to disclosure of information to unauthorized parties.	A staff member from a third-party service provider views confidential information on a key business system that is maintained by that service provider.
Problems with services provided by third parties (e.g., maintenance of systems) lead to modification of information on a system.	Problems at a third-party service provider lead to the modification of information on a key business system located at that provider's site and maintained by the provider.
Problems with services provided by third parties (e.g., maintenance of systems) lead to loss or destruction of information on a system.	Problems at a third-party service provider lead to the destruction of information on a key business system located at that provider's site and maintained by the provider.
Problems with services provided by third parties (e.g., maintenance of systems) lead to interruption of access to a system.	A system maintained by a third-party service provider and located at the provider's site is unavailable due to problems created by that provider's staff.
Natural disasters (e.g., flood, fire, tornado) lead to disclosure of information to unauthorized parties.	People at the site of a tornado see confidential memos that are dispersed among the debris.
Natural disasters (e.g., flood, fire, tornado) lead to modification of information.	---
Natural disasters (e.g., flood, fire, tornado) lead to loss or destruction of information.	The flooding of a basement area destroys paper records that are stored there.
Natural disasters (e.g., flood, fire, tornado) lead to interruption of access to a system.	The flooding of a computer room in the basement of a building prevents access to systems in that room.



* Blank lines indicate unusual or extremely rare possibilities.

Description	Example*
The physical configuration or arrangement of buildings, offices, or equipment leads to disclosure of information to unauthorized parties.	The layout of an office workspace enables anyone in the area to view customer credit card information displayed on computer screens.
The physical configuration or arrangement of buildings, offices, or equipment leads to modification of information on a system.	---
The physical configuration or arrangement of buildings, offices, or equipment leads to loss or destruction of information on a system.	---
The physical configuration or arrangement of buildings, offices, or equipment leads to interruption of access to a system.	---

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The Operationally Critical Threat, Asset, and Vulnerability Evaluation^{SM} (OCTAVE®) approach defines a risk-based strategic assessment and planning technique for security. OCTAVE is a self-directed approach, meaning that people from an organization assume responsibility for setting the organization's security strategy. OCTAVE-S is a variation of the approach tailored to the limited means and unique constraints typically found in small organizations (less than 100 people). OCTAVE-S is led by a small, interdisciplinary team (three to five people) of an organization's personnel who gather and analyze information, producing a protection strategy and mitigation plans based on the organization's unique operational security risks. To conduct OCTAVE-S effectively, the team must have broad knowledge of the organization's business and security processes, so it will be able to conduct all activities by itself.

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